

REMARKS

Claims 30-33, 38, 40-42, 46, 49-51 and 53-55 are currently pending in the present application. Favorable consideration and allowance of these claims are respectfully requested in view of the foregoing amendments and the following remarks. The Examiner is thanked for his careful consideration of this application and the withdrawal of the prior drawing objection and 112 1st paragraph rejection is acknowledged with appreciation.

The rejection of claims 30-33, 38, 40-42, 46, 49-51 and 53-55 under 35 U.S.C. § 112, first paragraph, as lacking adequate written description, is respectfully traversed. The present amendment provides the original term "manometer" rather than "pressure gauge". Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

The rejection of claims 30-33, 38, 40, 41, 46, 49, 51 and 53-55 under 35 U.S.C. § 103(a) as unpatentable over Tomita et al in view of Ono, Ayers and Mantz is respectfully traversed.

As set forth in amended claim 30., 51 and 53 the present invention provides, among others, the specific feature of "said signal processing unit obtaining a flow rate S of said source gas from a value Ir of said detection signal according to a relationship $S = A \times Ir \times (1/P) \times C$, A being a constant obtained by experiment, P being a pressure of said mixed gas obtained by said manometer, C being a total flow rate of said source gas and said vaporizing gas and said diluting gas, said signal processing unit further calculating said absolute concentration of said source gas in said mixed gas according to a relationship $S/C = A \times Ir \times (1/P)$. Further, the present claim listing reflects the cumulative amendments of July 7, 2008, the earlier amendments, including those that were previously entered.

According to the present invention, it becomes possible to control the absolute concentration of the source gas to a predetermined desired value. This

makes it possible to reproduce optimum deposition conditions with reliability even when a new film-formation process is restarted following termination of an earlier film-formation process. The specification so indicates in paragraph [0155], see the specification of the application as published. Support for these amendments is provided at least in paragraphs [0146-0153] of the application as published

The Tomita reference fails to teach or suggest this feature of the present invention. While Tomita teaches the use of an ICP photo analyzer 46, this ICP photo analyzer merely measures the mixing ratio of a plurality of metal organic gases. Thus, it is not possible with Tomita to obtain the flow rate of an individual metal organic gas. Further, the Ono reference also fails to teach or suggest this feature of the present invention. Ono merely teaches the use of output of the analyzer 27 for threshold control of the valves 23 and 24. There is no teaching in Ono to obtain the flow rate of the source gas and calculate the absolute concentration of the source gas from the total flow rate of the source gas, carrier gas and the diluting gas.

The Ayers reference also fails to teach or suggest this feature of the invention of the present application. Ayers merely teaches the concentration ratio of arsine and H₂. Ayers does not provide the flow rate or absolute concentration of arsine. Mantz, too, fails to teach or suggest the foregoing feature of the present invention. More specifically, Mantz does not use the total flow rate C for calculating the “absolute abundances”.

Additionally, none of Tomita, Ono, Ayers and Mantz teaches the feature of claim 30 of “maintaining said flow rate of said vaporizing gas constant” at the time of the controller “decreasing said flow rate of said diluting gas in the event said concentration of said source gas has decreased a lower limit value”.

For at least the foregoing reasons, the rejection of claim 30, as well as the rejection of claims 31-33, 38, 40-42, 46, 49-50 depending from claim 30, cannot be properly maintained, and withdrawal thereof is respectfully requested.

Similarly, the rejections of claims 51 and 52, as well as the rejection of claims 53-55, cannot be properly maintained, and withdrawal thereof is respectfully requested

The rejection of claims 30-33, 38, 40, 41, 46, 49, 51 and 53-55 under 35 U.S.C. § 103(a) as unpatentable over Tomita et al in view of Ono, Ayers, Mantz and Satake is respectfully traversed.

The Tomita, Ono Ayers and Mantz references are discussed above. The Satake reference is cited as making up for the failure of the other references to teach an FTIR concentration detector. However, Satake does not make up for the failure of the collection of other references to teach the claimed invention, as discussed above.

Accordingly, the proposed combination of references does teach or suggest the presently claimed invention and reconsideration and withdrawal of this rejection are respectfully requested.

The rejection of claims 49 and 50 U.S.C. § 103(a) as unpatentable over Tomita et al in view of Ono, Ayers, Mantz and Holst is respectfully traversed.

The Tomita, Ono Ayers and Mantz references are discussed above. The Holst reference is cited as making up for the failure of the other references to teach an non-dispersion infrared spectrometer (NDIR). However, Holst does not make up for the failure of the collection of other references to teach the claimed invention, as discussed above.

Accordingly, the proposed combination of references does teach or suggest the presently claimed invention and reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket No. 010986.52578US).

Respectfully submitted,

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